



Investment Committee

Item Number 7 – Open Session

Subject: ALM Study Discussion

Presenter(s): Geraldine Jimenez and Josh Diedesch

Item Type: Information

Date & Time: November 3, 2022 – 60 minutes

Attachment(s): Attachment 1 – Role of Strategic Classes

Attachment 2 – 2022-23 Asset Liability Management Study Fact Sheet

Attachment 3 – 2022-23 Asset Liability Management Study Timeline Table

PowerPoint(s): 2022-23 Asset Liability Management Study Education

Cambridge Associates Private Credit Discussion

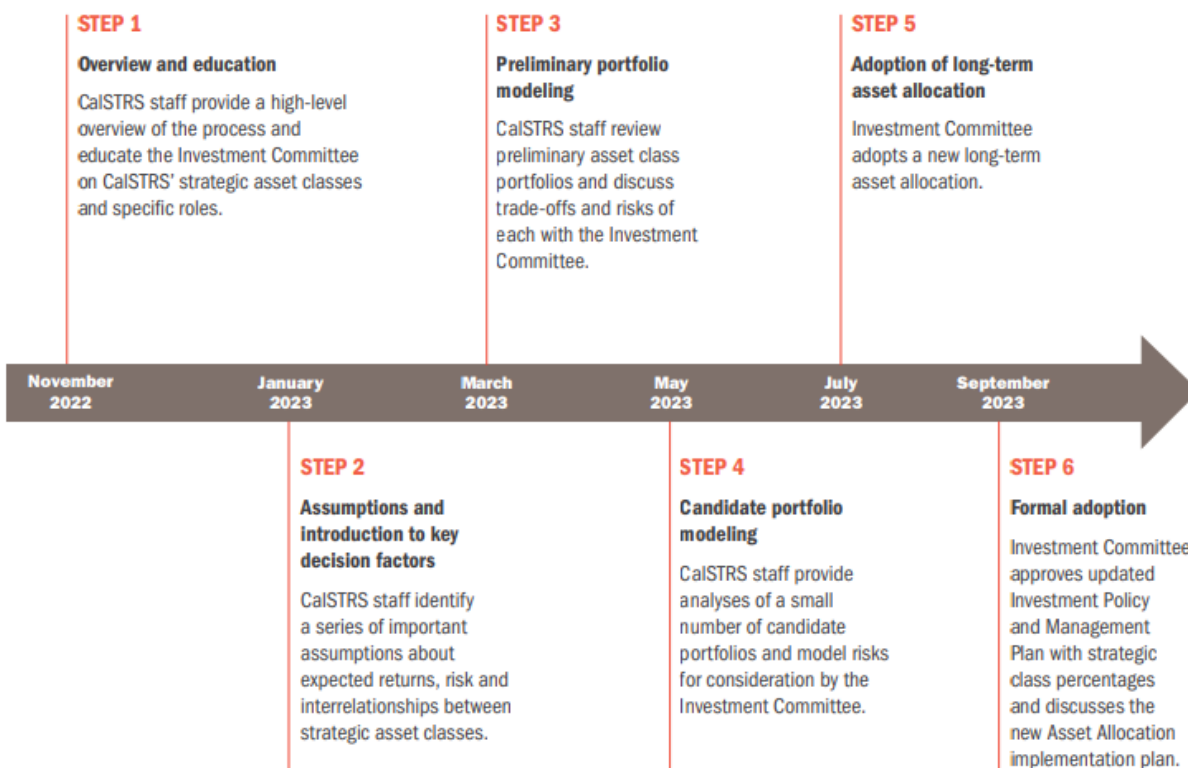
Item Purpose

The purpose of this item is to introduce the first step in the Investment Committee 2022-23 Asset Liability Management Study (ALM). The ALM is governed by the [CalSTRS Investment Policy and Management Plan](#) (IPMP).

Executive Summary

The Asset-Liability Management (ALM) Study links the asset allocation with the [CalSTRS Funding Plan](#) and provides a framework for evaluating risks, including liability risks, market risks, geopolitical risks, macroeconomic risk, and low carbon transition risks, among others. This item introduces the 2022-23 ALM study, presents its importance in fulfilling the CalSTRS Funding Plan, and identifies the steps involved in adopting long-term asset allocation targets. The discussion will also include an educational component to introduce private credit and an opportunities portfolio for inclusion in the ALM study. Below are the major steps in the process and the timeline for completion.

ALM process and timeline



Background

The Investment Committee conducts an ALM study every four years based on the Board’s IPMP. The previous study was completed in 2019 and adopted in policy at the January 2020 Board meeting. As the overarching policy document for the Investment Branch, the IPMP begins with the CalSTRS Investments Beliefs and then presents the framework for meeting CalSTRS’ objectives, including the current Strategic Asset Allocation Long-term Policy Targets. The Asset-Liability Management (ALM) Study links the asset allocation with the funding plan and provides a framework for evaluating risks, including liability risks, market risks, geopolitical risks, macroeconomic risk, and low carbon transition risks, among others. At the conclusion of the 2023 Asset Liability Management Study, the IPMP will be updated to the new asset allocation policy targets. Table 1 shows the current asset allocation policy targets approved during the last study.

Table 1. CalSTRS Long-term Policy Targets

Strategic Class	Asset Class/Strategy	Long-Term Target (Adopted 2019)
Economic Growth	Global Equity	42%
	Private Equity	13%
Real Assets	Real Estate	15%
	Inflation Sensitive	6%
Diversifying	Fixed Income	12%
	Risk Mitigating Strategies (RMS)	10%
	Cash / Liquidity	2%
Total		100%

The Investment Committee conducts an Asset Liability Management (ALM) Study every four years. The previous study ran from January 2019 to November 2019. Prior to the 2019 Study, the Committee conducted an ALM every three years. The four-year cycle aligns the strategic asset allocation decision with review of actuarial assumptions and facilitates a more robust collaboration between Investments Staff and Actuarial Staff. The ALM team comprises Investments and Actuarial Resources Staff.

Other developments since the last ALM Study include the Investment Committee adopting a ninth belief to the CalSTRS Investment Beliefs. Four Beliefs relate directly to the strategic asset allocation.

Belief 1

Diversification strengthens the fund.

Diversification improves the risk-adjusted profile of an investment portfolio.

Belief 5

CalSTRS can potentially capture an illiquidity risk premium.

Illiquid investments offer investors a return premium due to the inability to quickly buy, sell or convert them to cash as quickly as liquid or freely traded assets. CalSTRS believes it can capture this risk premium by investing in real estate, private equity and other similar assets.

Belief 6

Managing short-term drawdown risk can positively impact CalSTRS' ability to meet its long-term financial obligations.

As a system, CalSTRS is in a deficit funding position, experiencing ongoing negative cash outflows as benefits paid out exceed contributions received during a fiscal year. Given this status, the system is particularly sensitive to periods when its investments produce negative returns. In such situations, CalSTRS may be required to sell assets - due to its negative cash outflow status - when asset values are declining. In contrast, plans that exhibit positive cash inflows can purchase at a discount during such periods.

As a result of this sensitivity, periods of significant negative asset returns will actually impair CalSTRS' chances of achieving its long-term funding objectives, even assuming investment markets recover in later periods. Therefore, CalSTRS must attentively manage short-term drawdown risk when developing the long-term asset allocation and when shifting or rebalancing the portfolio.

Belief 9

Investment risks associated with climate change and the related economic transition—physical, policy and technology driven—materially impact the value of CalSTRS' investment portfolio.

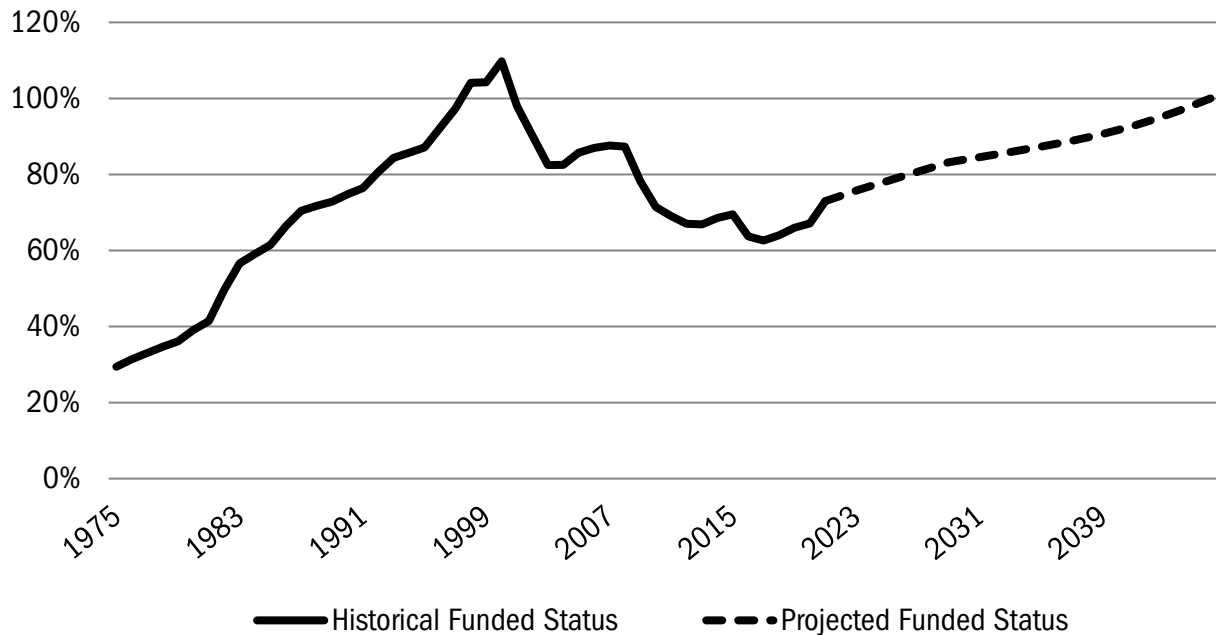
CalSTRS believes that public policies, technologies and physical impacts associated with climate change are driving a transition to a lower carbon economy. As a prudent fiduciary and diversified global investor, CalSTRS needs to understand the transition's impacts on companies, industries and countries and consider actions to mitigate risk and identify investment-related opportunities. CalSTRS recognizes the critical role that carbon pricing frameworks may play in integrating the costs of carbon emissions into the global economy to accelerate an orderly low-carbon transition and avoid exacerbating economic inequality and related geopolitical risks.

These Beliefs will guide the research and focus during the ALM process.

A key input into the ALM Study is the funding plan. In 2014 the California Legislature passed, and the Governor signed, a funding plan designed to bring the CalSTRS Defined Benefit Program to full funding by 2046. This funding plan details the shared responsibility and balance between contributions, investment returns, and benefit payments. It also provides the framework for all liability and expected funding level modeling in the ALM Study. Figure 1 shows the historical

and projected funded status for the Defined Benefit Program based on the June 30, 2021 actuarial valuation. Note that the projected funded status reflects the impact of the negative investment return in fiscal year 2021-22 and assumes the fund will earn 7% each year in the future.

Figure 1. Historical and Projected Funded Status



For more background and explanation of the funding plan, please refer to the [Review of CalSTRS Funding Levels and Risks](#) report being presented at the November 2022 regular board meeting.

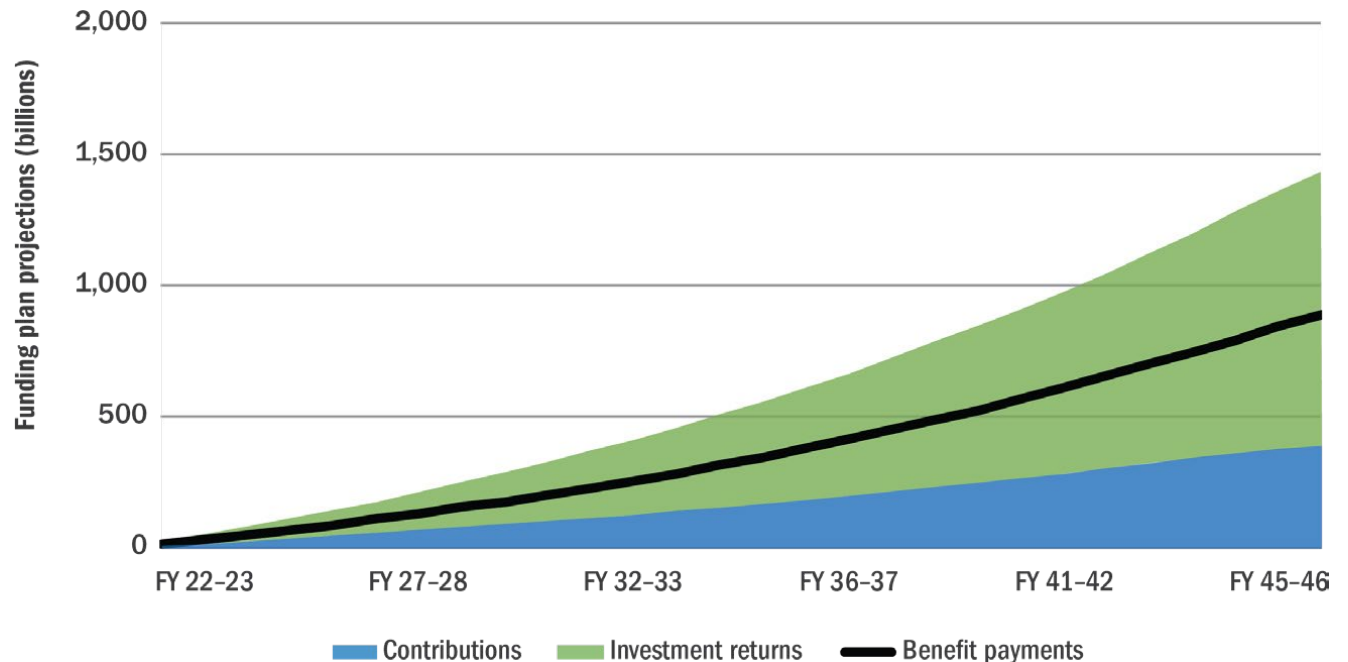
The Investment Committee’s ultimate objective in the ALM Study is setting the long-term strategic asset allocation. The strategic decision about how to invest the portfolio is arguably the single most important decision made by the Committee in its oversight and governance role for the CalSTRS portfolio. For the last 30 years, investment earnings have been the largest contributor to our ability to pay benefits (see figure 2 below) and CalSTRS expects that investment returns will continue to be the largest contributor to CalSTRS’ ability to pay benefits and reach full funding by 2046.

Figure 2: Sources of revenues to pay benefits for the last 30 years



Under the current funding plan and assumptions, cumulative investment returns are expected to reach nearly \$1 trillion versus approximately \$618 billion of contributions between 2022 and 2046. Figure 3 below shows the cumulative projected benefit payments, investment returns, and contributions through 2046. These figures are based upon the current funding plan and the current 7% actuarial rate of return assumption. This assumed rate of return is a key element of the CalSTRS funding plan and is the product of 1) an inflation assumption and 2) the assumed rate of the return for the strategic asset allocation.

Figure 3. Projected Investment Returns, Contributions, and Benefit Payments



Expected benefit payments and contributions are relatively stable and aren't subject to significant uncertainty. On the other hand, the expected investment returns assume that the portfolio earns the actuarial assumed rate year after year. In reality, the portfolio return is subject to significant uncertainty in the short-term and the long-term. Normal market risk can cause significant swings in the portfolio return in any given year. Even over longer time horizons, market returns can differ significantly from long-term expectations.

The rigorous Asset-Liability Modeling process employed by CalSTRS – with collaboration between Investments Staff, Actuarial Resources, and the Investment Committee general consultant Meketa – recognizes the uncertainty of investment returns while ensuring a prudent process of strategic asset allocation.

CalSTRS' historical experience and academic research show that strategic asset allocation is the most important driver of long-term returns.

The remaining sources of return derive from various portfolio implementation considerations that fall outside of the scope of the ALM Study. The Investment Committee oversees and governs portfolio implementation through other policy considerations, including things like benchmark selection, asset class ranges, active risk budgets, and a wide range of Investment policies. The ALM Study is singularly focused on the strategic asset allocation.

ALM Process & Connection to Investment Beliefs

Portfolio diversification is a cornerstone idea of modern portfolio theory and is the most important tool available to the Investment Committee for diversifying the portfolio. The balance between liquid, public investments and more illiquid, private investments is a key part of the strategic asset allocation decision. Later steps in the ALM Study will focus in more detail on the opportunities available to CalSTRS and the optimal allocation to those assets.

By connecting the strategic asset allocation with liability modeling, the Investment Committee can use the strategic asset allocation to manage a prudent level of short-term drawdown risk. Later steps will explore the tradeoffs involved with managing short-term drawdown risk and getting the best risk adjusted return.

Historical Asset Allocation at CalSTRS

Since the early 2000s, some of the major trends in the CalSTRS strategic asset allocation are:

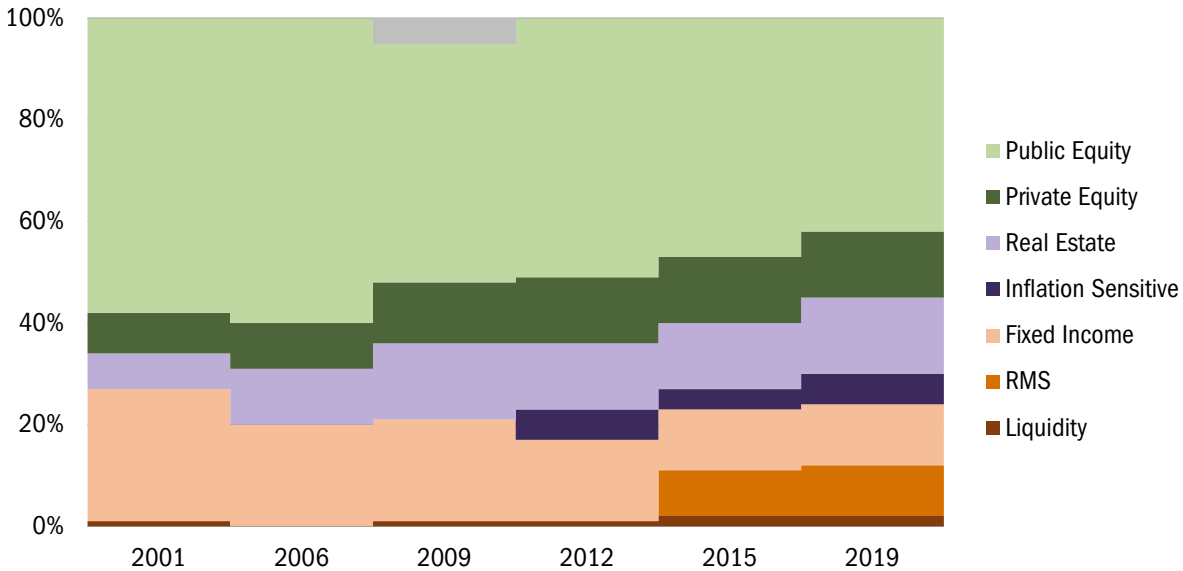
- Lower allocations to Public Equity and Fixed Income
- Higher allocations to Private Equity and Real Estate
- The creation of two new strategic classes: Inflation Sensitive and Risk Mitigating Strategies (RMS)

These trends reflect changes in the financial markets, particularly a long-term trend of lower interest rates and consequently lower future expected returns; innovation in financial markets; and evolution of the Investments Staff.

The expanded investment opportunities from the Collaborative Model is an example of the evolution in the Investment Staff expertise and capacity. The Collaborative Model influences the ability of Private Equity, Real Estate, and Infrastructure to reach strategic asset allocation targets.

Figure 4 below shows the changes in the strategic asset allocation mix over the past 20 years.

Figure 4: CalSTRS Strategic Asset Allocation Evolution



The strategic asset allocation has also changed to reflect the maturation of the CalSTRS defined benefit plan. As the plan has matured, it has shifted from being “cash flow positive” – total contributions exceeding benefit payments, to “cash flow negative” – total contributions less than benefit payments. This is a natural progression for the plan and it’s a trend that will continue in the long-term. Later ALM Study items, particularly the items focused on portfolio modeling, will detail the implications of negative cash flow, liquidity and leverage management, and the ways that portfolio structuring accommodates the plan’s negative cash flows.

Introduction to Strategic Classes

Selection of an optimal investment portfolio is the primary objective of an ALM study. Identifying the optimal portfolio involves selecting groups of assets with desirable risk-return characteristics and considering the relationship among the assets. Combining assets that respond differently in economic cycles can offer better risk adjusted returns in the long run. As an example, some assets may do well when economic growth is good while others may diversify these assets and perform better when economic growth is poor, or inflation is higher.

Underlying many assets is a smaller number of underlying economic risks. For example, public equity has a strong connection to economic growth. Real Estate has a connection to inflation risk and economic growth risk. The common theme is the idea of a small number of economic risk

factors that drive asset returns. By combining assets that are organized around security type and strategy with a small number of economic risk drivers, it’s possible to get a more complete picture of risk in the portfolio.

Mapping Asset Classes to Strategic Classes

Exposure to major economic risk factors ultimately drives the risk and return of the CalSTRS portfolio. By viewing the portfolio this way, it’s possible to first consider the appropriate amount of risk and the balance of major sources of risk, before moving on to the best way to achieve the desired mix of risks. This is a natural evolution in the process to better view and manage the long-term asset allocation. Table 2 groups the traditional CalSTRS asset classes – organized around security type and strategy – into Strategic Classes that reflect the major drivers of risk in each asset class.

Table 2. Strategic Classes & Asset Classes

Strategic Class	Asset Class	
Economic Growth	Public Equity	Opportunities Portfolio (Innovation, SISS, Proposed Opportunities)
	Private Equity	
Real Assets	Real Estate	
	Inflation Sensitive	
Credit	Core: Fixed Income Credit (Public & Private); Real Estate, Inflation Sensitive	
	Non-Core: Private Equity Credit (Distressed & Mezzanine)	
	Specialty Finance & Opportunistic	
Diversifying	Fixed Income Interest Rates	
	RMS	
	Liquidity/Cash	

Attachment 1 provides a detailed overview of each strategic class, including CalSTRS’ history of investments in the class and its role in the portfolio.

Strategic Class Additions in 2022-23

Much of the strategic class framework from the 2019 remains, with a few adjustments to reflect the evolving nature of the CalSTRS portfolio and its implementation. The two main changes are the addition of Credit as a strategic class and the inclusion of the Opportunities Portfolio.

Credit (private and public)

While CalSTRS has a long history of investing in various credit markets, these strategies have been traditionally modeled within existing asset classes that make those investments. Credit spans public and private markets, generating income returns by providing debt to corporations, real asset investors, and specialty areas needing debt financing. There are two primary reasons to include Credit as a standalone Strategic Class:

1. Credit provides relatively stable income returns to the portfolio, making it a beneficial tool of diversification and a valuable source of long-term returns. Credit does have exposure to Economic Growth and Diversifying (through interest rate exposure) but is different enough to characterize it as a distinct source of risk.
2. By its nature, Credit spans multiple traditional asset classes. It also has distinct cycles in different sub-strategies. The range of opportunities and the distinct cycles mean that the portfolio can benefit from a long-term allocation with implementation across asset classes based on market opportunities.

Opportunities Portfolio

CalSTRS has a long history of success with the Innovation portfolio, transitioning strategies from “incubation” to long-term allocations; seeking unique opportunities with the Collaborative Model; and participating in the transition to the low carbon future. Prior ALM studies have not explicitly modeled Innovation strategies as the allocation was relatively small and the strategies generally reflected existing allocations within the strategic asset allocation. As the strategies within this category are growing, due to more complex investment opportunities and the CalSTRS Collaborative Model that includes scaling unique, attractive strategies that may not ‘fit neatly’ into existing asset classes and/or exceed asset class diversification limits, this Opportunities category lends itself to explicit modeling in this ALM Study.

Figure 5 shows the scope of the proposed Opportunities Portfolio strategies.

Figure 5. Proposed Opportunities Portfolio



Project Plan & Timing

In order to help the Investment Committee reach its ultimate objective of adopting a long-term asset allocation, the ALM Study spans six Investment Committee meetings with Staff and Consultants providing research, analysis, and recommendations along the way. Attachment 4 shows the detailed timeline of the ALM, including the interaction between the Investment Committee asset allocation review and the Board’s Actuarial items.

For the Investment Committee, the six meetings are organized around the important steps needed to adopt the strategic asset allocation.

Step 1 (November): Overview & Education

The first meeting in the ALM Study is devoted to a high-level overview of the project; education on the asset allocation process and the importance of the asset allocation decision; and a historical perspective on asset allocation at CalSTRS.

The educational component of this meeting will focus on two areas:

1. Discussion of Private Credit with Cambridge Associates and Staff covering what it is, the history of Private Credit at CalSTRS, its role in the portfolio, and the potential risk / return benefits of Private Credit in the strategic asset allocation.
2. Discussion of the Opportunities portfolio and its role at CalSTRS.

Step 2 (January): Capital Market Assumptions & Introduction to Key Decision Factors

The second meeting is dedicated to important assumptions of the ALM Study with the Capital Market Assumptions (CMA). Portfolio modeling used to evaluate different portfolio options relies on a series of important assumptions about expected returns for the strategic classes, risk, and the interrelationships between strategic classes. Staff and Consultants will provide information and recommendations on reasonable assumptions for portfolio modeling.

The January meeting will also serve as an introduction to the notion of Key Decision Factors – metrics that Investment Committee members can use to weigh the merits of different portfolio options. These metrics are tied to CalSTRS’ goal of providing benefits to its members and include things like portfolio risk, funded status projections, and contribution rates.

Step 3 (March): Preliminary Portfolio Modeling

The third meeting will provide the Investment Committee with its first look at a range of preliminary portfolios. These preliminary portfolios will span a wide range of risk and return. Starting with a wider range of portfolios facilitates a robust discussion of the trade-offs with risk, return, contribution rates, and funding. The Key Decision Factors introduced in January will provide a structured framework for weighing the tradeoffs involved with different levels of portfolio risk and return. Staff and Consultants will seek guidance from the Committee to return in May with portfolios that meet the desired level of risk.

Step 4 (May): Candidate Portfolio Modeling

Using guidance from the March meeting, Staff and Consultants will provide analyses of a small number of candidate portfolios meeting the objectives of the Committee. These candidate portfolios will have similar Key Decision Factor characteristics based on the March meeting discussions. Staff and Consultants will provide additional analyses and modeling, such as growth regimes and sensitivity analyses, to further support the Committee’s ultimate objective of selecting a long-term asset allocation.

Step 5 (July): Adoption of Long-Term Asset Allocation

The goal for the fifth meeting of the ALM Study is for the Investment Committee to adopt a new long-term asset allocation. Staff and Consultants will provide any further desired analyses of candidate portfolios to support the Committee’s decision. Staff will return in September 2023 with an update to the IPMP and an implementation plan for the new asset allocation.

Step 6 (September): Formal Adoption of Long-Term Asset Allocation

The sixth and final meeting of the ALM Study is for the Investment Committee to approve the updated Investment Policy with strategic class percentages and discuss the new asset allocation implementation plan.

The next actuarial experience study will incorporate the new asset allocation targets and will affect the adoption of new actuarial assumptions by the full Board in January 2024.

Strategic Plan Linkage: Goal 1 of the [CalSTRS Strategic Plan](#). Trusted stewards – Ensuring a well-governed, financially sound trust fund.

Board Policy Linkage: [CalSTRS Investment Policy and Management Plan](#)

Optional Reference Material: *(prior board items, supplemental educational materials, etc.)*

Opportunities Portfolio - [Collaborative Model 2.0 - Opportunities Portfolio \(May 2022 Investment Committee\)](#)